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PATENT SPECIFICATION



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PROVISIONAL SPECIFICATION

Improvements in or relating to Portable Polishing and like Machines

I, HUBERT SCOTT-PAINE, a British Subject, of The British Power Boat Company, Hythe, Southampton, Hampshire, do hereby declare the nature of this invention to be as follows:—

This invention is for improvements in or relating to portable polishing and like machines of the type in which the surface to be treated is rubbed with an abrasive medium, such for example as sand; a common form of such machine comprises an electric motor driving a flexible disc at a suitably high speed, the whole being arranged so that the flat side of the disc can be pressed on to, and traversed over, the surface to be treated. Such a machine is particularly useful for finishing wooden surfaces such as floors, decks of ships and boats and so forth, but one disadvantage in its use is the amount of dust that is evolved and it is an object of the present invention to overcome this difficulty.

According to this invention there is combined with a machine of the kind described, a flexible casing surrounding the rubbing element, means for pressing it into contact with the surface to be treated, and means for connecting a suction device to the interior of the flexible casing.

According to another feature of this invention the device comprises a rigid frame secured on the polishing machine, a number of resiliently mounted pins projecting from the frame around the rubbing member, a strip of felt carried on the ends of said pins to engage the surface to be treated and a flexible covering extending from the felt over the frame to provide a closure around the rubbing member; this closure around the rubbing member confines the dust which is extracted by the suction device so that the use of the device is not attended by discomfort or danger to the operators.

In a particular embodiment of this invention, which will now be described by way of example, the polishing machine comprises an electric motor whereof the frame is provided with a handle for the operators' use, and at one end of the motor spindle there is mounted a flexible disc of

which the flat side can be pressed on the surface to be treated.

A circular plate is secured on the motor-frame and it extends radially beyond the circumference of the disc and carries around its edge an open frame-work consisting of two strips spaced apart along the axis of the disc. In these strips there are mounted a number of pins parallel to the axis of the disc and extending away from the motor beyond it, and each pin is free to slide longitudinally; a spring is provided on each pin so that it is normally pressed forward beyond the operative surface of the disc, and suitable stops limit its movement. On the projecting ends of all the pins there is mounted a strip of thick felt or other soft material so that it forms a complete ring mounted on the frame-work at a position in front of the rubbing surface of the disc, so that it can make a good joint with the surface which is being treated; owing to the resilient mounting of all the pins carrying it, it can accommodate itself to irregularities in the surface. A cover of any suitable fabric, such as artificial leather, leather, stout canvas or like flexible material extends from the felt strip aforesaid around the frame-work carrying the pins so as to make a tight joint with the circular plate fixed on the frame of the motor. There is thus provided a substantially complete enclosure of the disc when the machine is applied to any surface which is to be treated. Any dust evolved in the operation of the machine is thereby confined to this chamber, and means for extracting it are provided by a pipe connection through the circular metal plate; in order to provide an adequate opening it preferably extends for a substantial distance circumferentially around the plate as a volute chamber terminating in a tubular part which can be connected to any suitable suction pipe or vacuum-cleaning device.

In order to assist in the extraction of the dust, a fan may be provided on the motor spindle behind the sanding disc to agitate the dust and keep it in suspension so that the suction device can be fully operative.

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It will be seen that the only part of the device, apart from the operating disc, coming into contact with the work is the soft felt strip thereby obviating any injury to the surface being sanded or polished.

Dated this 31st day of May, 1937.

BOULT, WADE & TENNANT,
Chartered Patent Agents,
111 & 112, Hatton Garden,
London, E.C.1.

COMPLETE SPECIFICATION

Improvements in or relating to Portable Polishing and like Machines

I, HUBERT SCOTT-PAINE, a British Subject, of The British Power Boat Company, Hythe, Southampton, Hampshire, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention is for improvements in or relating to portable polishing and like machines of the kind in which the surface to be treated is rubbed by a rubbing-member provided with an abrasive medium, such for example as sand; a common form of such machine comprises an electric motor driving a flexible disc having a sand-paper or other abrasive surface, at a suitably high speed, the whole being arranged so that the flat abrasive side of the disc can be pressed on to, and traversed over, the surface to be treated. Such a machine is particularly useful for finishing wooden surfaces such as floors, decks of ships and boats and so forth, but one disadvantage in its use is the amount of dust that is evolved and it is an object of the present invention to overcome this difficulty.

According to this invention there is combined with a machine of the kind described, a flexible casing surrounding the rubbing-member, which casing is resiliently mounted on the machine-frame so as to be bodily movable in relation thereto and so that it may be resiliently pressed into contact with the surface to be treated and means for connecting a suction device to the interior of the flexible casing.

According to another feature of this invention the device comprises a rigid frame secured on the polishing or like machine, a number of resiliently mounted pins projecting from the frame around the rubbing-member, a strip of felt carried on the ends of said pins to engage the surface to be treated and a flexible covering extending from the felt over the frame to provide a closure around the rubbing-member; this closure around the rubbing-member confines the dust which is extracted by the suction device so that the use of the device is not attended by

discomfort or danger to the operators. 60

A specific embodiment of the present invention will now be described, by way of example, with reference to the accompanying drawings, in which:—

Figure 1 is a side elevation, partly in section, of a polishing machine according to the present invention, and 65

Figure 2 is a plan.

As shown in the drawings the polishing machine comprises an electric motor 10 whereof the frame is provided with a handle 11 for the operator's use, which handle is adapted to enclose the end of a flexible cable 12 leading to the motor 10. At the lower end of the motor spindle 13 there is mounted a flexible polishing disc 14 of which the flat side can be pressed on the surface to be treated. 70

A cast metal frame 15 is secured to the motor-frame by means of a flange 16 and the frame, which extends radially beyond the circumference of the disc 14, is formed integrally with two flanges 17 spaced apart along the axis of the disc. In the flanges 17 there are mounted a number of pins 18 parallel to the axis of the disc, and each pin is free to slide longitudinally; a spring 19 is provided on each pin so that it is normally pressed beyond the operative surface of the disc and a stop 20 limits its movement. On the projecting ends of all the pins there is mounted a ring 21 and a strip 22 of thick felt is sewn thereon so that it forms a complete ring mounted at a position in front of the rubbing surface of the disc, so that it can make a good joint with the surface which is being treated; owing to the resilient mounting of the pins 18 carrying it, it can accommodate itself to irregularities in the surface. As shown in Figure 1, when the machine is placed on an uneven surface, part of the strip 22 is raised, thereby compressing some of the springs 21. A flexible canvas cover 23 is sewn on to the inside of the felt 22 and extends from the felt to the casting 15 to which it is clamped by means of a ring 24 which is riveted to the casting. There is thus provided a flexible casing giving substantially complete enclosure of the disc 14 when the machine is applied to 80 85 90 95 100 105 110

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any surface which is to be treated. Any dust evolved in the operation of the machine is thereby confined to this casing and means for extracting it are provided
 5 by a pipe 25 which extends through and is formed integrally with the frame 15; in order to provide an adequate opening the pipe 25 extends, as shown in Figure 2, for a substantial distance circum-
 10 ferentially around the plate 15 as a volute chamber, terminating in a tubular part 26 which can be connected to any suitable suction pipe or vacuum cleaning device.

As shown in Figure 1, in order to assist
 15 in the extraction of the dust, a fan 27 may be provided on the motor spindle 18, behind the disc 14, to agitate the dust and keep it in suspension so that the suction device can be fully operative.

20 It will be seen that the only part of the device coming into contact with the work, apart from the operating disc 14 is the soft felt strip 25 thereby obviating any injury to the surface being sanded or
 25 polished.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I
 30 claim is:—

1. The combination with a machine of the kind described of a flexible casing surrounding the rubber-member which casing is resiliently mounted on the
 35 machine-frame so as to be bodily movable in relation thereto and so that it may be resiliently pressed into contact with the surface to be treated and means for connecting a suction-device to the interior
 40 of the flexible casing.

2. A construction according to claim 1, wherein the device comprises a rigid

frame secured on the polishing or like machine, a number of resiliently mounted pins projecting from the frame around
 45 the rubbing-member, a strip of felt carried on the ends of said pins to engage the surface to be treated and a flexible covering extending from the felt to the frame to provide a closure round the
 50 rubbing-member.

3. A construction according to claim 2, wherein the device comprises two flanges on the frame and spaced apart along the axis of the rubbing-member, a plurality
 55 of pins, mounted in the flanges parallel to the axis of the rubbing-member and free to slide longitudinally, a spring on each pin to press it forward beyond the operative surface of the rubbing-member
 60 and a stop to limit the movement of the pin.

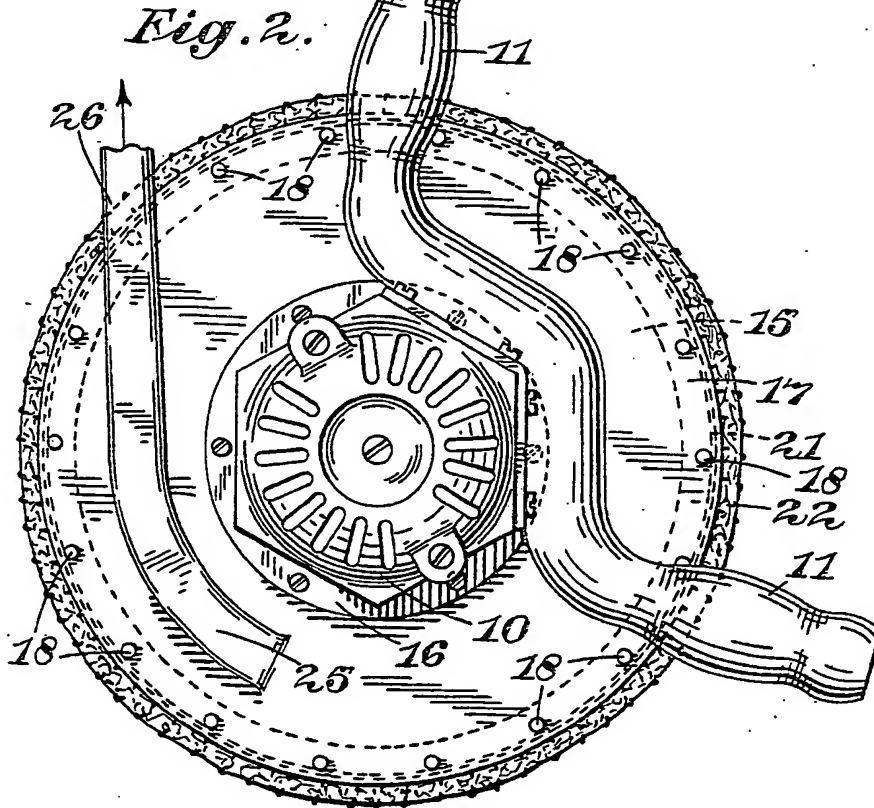
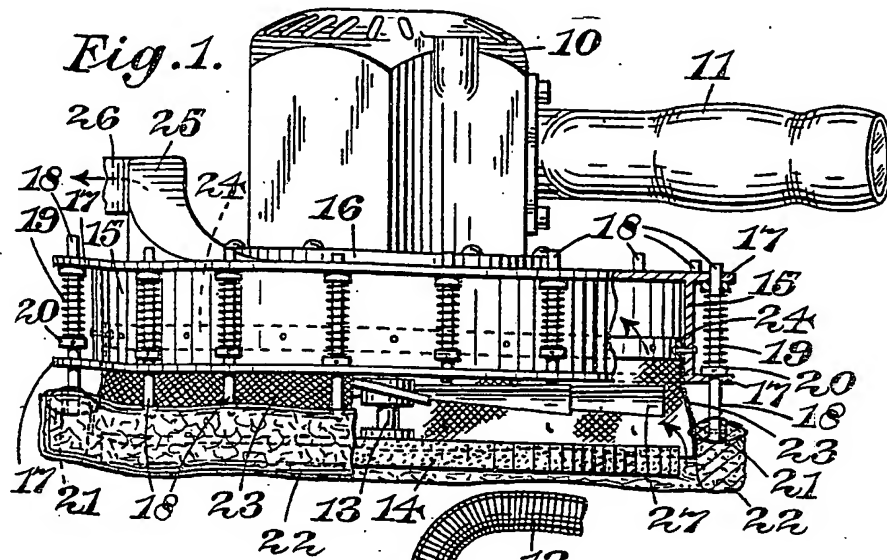
4. A construction according to any of the preceding claims, wherein the device comprises a fan provided on the motor
 65 spindle behind the rubbing-member for the purpose described.

5. A construction according to any of the preceding claims, wherein the means for connecting a suction device to the interior of the casing comprises a pipe connection which extends circumferentially
 70 as a volute chamber terminating in a tubular part which is adapted to be connected to a suction-device.

6. A portable polishing machine substantially as described with reference to the accompanying drawings.

Dated this 29th day of November, 1937.
 BOULT, WADE & TENNANT,
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 London, E.C.1.

[This Drawing is a reproduction of the Original on a reduced scale.]



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